long, but no additional revenue is generated. This additional "holding time" undeniably results in additional costs for GTE, as the company must invest in large amounts of additional equipment to prevent network degradation.

While opponents of ISP-related reforms argue that increased revenues from outbound usage charges and the additional residence lines needed for widespread Internet usage will compensate for costs LECs incur from ISP-related calls,[40] this is not the case. First, neither ISPs nor their customers typically incur outbound usage charges, unlike many business customers of the PSTN. Their customers subscribe to flat-rated residential service, and ISPs themselves rarely originate calls. Instead they receive incoming calls at their computer servers for interconnection with information resources at that location or with remote hosts. Although trunk side services such as CyberPop[sm], DS1 and PRI, used by many ISPs in GTE's territory, ameliorate congestion on the serving wire center to ISP premise link, they do not resolve the cost recovery shortfall.

Second, the sale of additional residence lines used for Internet access does not ameliorate the problem of the ISP exemption, it compounds it. Customers who purchase second lines for Internet access rarely subscribe to usage sensitive offerings for local calling, make few toll calls from the second line and do not order vertical services such as call waiting that would represent additional revenue. Further, given the regulated nature of residential service, the revenue gained from placing a second residential line into use often fails to

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[40] *See* Selwyn/Laszlo Study at 8 n.14.

compensate a LEC for even the incremental cost of providing the basic service to a customer.[41] Even if the plant necessary to provide a second residential line is already in place,[42] it does not mean that the LEC does not have any associated costs for that line. The expense of making this plant operational may be less than constructing a new plant to meet the increased need, but it still exists. Also, once used, that line is unavailable for use as primary service for someone else, therefore loop plant will need to be augmented to meet additional primary service demand. Additionally, activation of the second line causes additions to the end office switches in the form of line cards and associated common equipment.

Finally, when subscribers have a second line dedicated to Internet usage, they have even less incentive to limit their access of Internet services. With only one residential line, Internet use is limited by the need also to use the line for voice services. When the primary line can remain open for incoming and outgoing voice calls while enhanced services are accessed, any restraint on the use of the secondary line disappears and the cost intensive scenario described above is exacerbated.

The ISPs' and their end users' incentives under the "exemption" to continue to utilize local business and residential service, absent concerted action by LECs, could lead to a dangerous overload of the PSTN. And, LECs' and their customers' ability to continue to

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[41] *See generally* Comments of GTE, CC Docket Number No. 96-98, (residential service rates typically do not recover even their own directly attributable costs on a forward-looking basis, much less the additional network augmentation costs identified herein) ("GTE Interconnection Comments").

[42] In some cases, the drop from the pole to the house may be in place, but the rest of the required loop is not in place.

subsidize the necessary fixes is not unlimited. As long as ISPs and their customers lack any incentive to limit their use of business and residential lines, they will continue to push the network to the outer limit of its capacity. America Online's ("AOL's") battle with congestion earlier this year illustrates this process. AOL's institution of a flat-rated pricing scheme removed the economic incentive to moderate use of their network - much as the ISP exemption removes the economic incentive to efficiently use the PSTN.[43]

The result is well known. AOL's customers dramatically increased their use of the company's and the LECs' infrastructure.[44] AOL customers' average daily use increased from 14 minutes per day in September of 1996 to 32 minutes per day in January of 1997, an increase of over 125 percent. At the same time their average holding time increased from 16 minutes to 26 minutes, an increase of over 60 percent. While AOL users increased their use of the LEC network by over 180 percent per day from September 1996 to January 1997, GTE and other LECs received no additional network revenues to offset the usage sensitive costs of providing access to AOL's network.[45]

AOL attempted to adapt their equipment, but could not match the pace of skyrocketing demand.[46] As the limits of the network were tested, customers experienced major delays in

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[43] *See* David S. Hilzenrath, *At This Rate, They'll Be Swamped; How Fixed Fees on the Net Make for Second Thoughts and Some Sore Users*, Wash. Post, Jan. 24, 1997, at D1.

[44] *See* Craig Stoltz, *When AOL Goes AWOL*, Wash. Post, Feb. 21, 1997, at N66.

[45] See Charles Ealy and Jennifer Files, *AOL Answers Gripes*, Dallas Morning News, at 1D (Jan. 17, 1997).

[46] *See* Denise Pappalardo and Beth Snyder, *AOL blackout: a dark portent?* ASAP, Aug. 12, 1996, at 7.

receiving service and, finally, even total failure of some services.[47] AOL's blocking problems mirror those in the PSTN, however, thus far LECs have done a much better job of managing peak usage stress on the network. [48]

The economics are simple. When demand exceeds supply and the supplier cannot increase supply efficiently or adjust prices so as to control demand, customers will receive deficient service. In this manner, the implicit, unfunded subsidy system created by the ISP "exemption" is undermining achievement of the FCC's avowed goal of creating an advanced, feature-rich, data friendly network infrastructure.

B. New Competition Policies Will Exacerbate the Cost Recovery Shortfall

As explained in detail in GTE's comments on the access charge reform *NPRM*, the "'trilogy' of the 1996 Act implementation proceedings creates grave risks" because "the use of hypothetical, forward-looking incremental costs to price network elements, determine universal service support, and set access rates would preclude GTE from recovering [its]

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[47] *See* Steve Lohr, *Refunds Planned By America Online In Network Jam*, N.Y. Times, Jan. 30, 1997, at A1; David S. Hilzenrath and Jennifer Ordonez, *AOL to Give Refunds to Subscribers; Online Service Settles With 36 States Over Computer Congestion*, Wash. Post, Jan. 30, 1997, at A1; Louise Kehoe, *AOL agrees refunds after lawsuits threat Online service group overloaded its networks*, Financial Times, Jan. 30, 1997, Sec. I at 20.

[48] Had AOL augmented their network prior to implementing flat-rate pricing, LEC usage would have increased even more than it did. The result of this increase would have further taxed the PSTN.

legitimately incurred costs."[49] These "costs" include the subsidies for universal service and other policy objectives that historically have been recovered in the rates for other services, particularly interstate access and intrastate toll offerings. Although many of the burdens and, hence, the costs of subsidized network usage will remain with LECs as carriers of last resort, the services which fund the subsidies will be subject to increasing competitive pressures, and customers of those services will be susceptible to overtures from new entrants utilizing below cost "wholesale" services and network elements obtained from LECs. Thus, even if Section 254 of the Communications Act did not already mandate the removal of such hidden subsidies, it is apparent that they could not be sustained in the new competitive environment.[50] It follows that not only will there be no sources of additional revenue to compensate for Internet access network augmentation costs in the future, but also that recovery of even existing costs will be endangered.

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[49] Comments of GTE, CC Docket Nos. 96-262, 94-1, 91-213, at vi, 3-16 (filed Jan. 29, 1997). Although the United States Court of Appeals for the 8th Circuit has stayed the interconnection pricing rules pending resolution of appeals, *Iowa Utilities Bd. et al. v. FCC*, No. 96-3321 *et al.*, 1996 WL 589204 (8th Cir. Oct. 15, 1996), many States have enacted regulations substantially similar to the FCC's. *See NOI*, ¶ 314 ("We also seek comment on how the matters before us in our Local Competition and Universal Service proceedings affect information service providers and raise issues that we need to address in this proceeding").

[50] *See* 47 U.S.C. § 254.

V. THE ISSUES IDENTIFIED IN THE *NOI* CAN BEST BE ADDRESSED THROUGH A CONSISTENT AND COMPREHENSIVE APPROACH TO NETWORK COST RECOVERY

Incumbent LECs are facing a cost recovery crisis that will only grow in terms of both immediacy and magnitude if current projections regarding future Internet usage are correct. The Commission must, therefore, take action to address this problem not merely to ensure the recovery of LECs' legitimate costs, but also to further the goals set out in the *NOI* regarding encouragement of the development of a technologically advanced, data friendly public network or networks. To this end, the FCC must not allow itself to be deterred by the numerous arguments offered by various members of the ISP community that the Commission preserve the status quo and avoid addressing the problem.

For example, it should be irrelevant at this point whether or not ISPs currently enjoy, or ever did enjoy, an "exemption" from the applicability of the access charge rules.[51] It cannot be disputed that access traffic to ISPs' networks has increased dramatically since the access charge rules were promulgated in the mid-1980s, and the ISPs providing such access are no longer only fledgling businesses, but major players such as AT&T and MCI. The different service applications offered by ISPs have similarly multiplied and some, such as Internet telephony, are directly substitutable for voice services subject to access charges. In addition, as shown above, ISPs are not currently compensating LECs for the full costs of

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[51] *See, e.g.*, Comments of the Internet Access Coalition, CC Docket Nos. 96-262, 94-1, 91-213, 96-203, at 10-12 (filed Jan. 29, 1997) ("Coalition Comments").

delivering that traffic, nor are the costs recovered elsewhere in LECs' rate structures.[52] It follows that the debate over appropriate pricing mechanisms for ISPs' use of the network should be conducted on the basis of such existing facts, not constrained by past rationales that hold little relevance for the present.[53]

For similar reasons, claims of unlawful discrimination if ISPs are treated differently than other business customers of network services lack merit.[54] The record in this proceeding conclusively demonstrates that ISPs have different usage characteristics than the vast majority of other business users and that those differences impose substantial additional costs on the network. In its *First Interconnection Order*, the Commission acknowledged that it is not discriminatory to establish different rates for customers that exhibit disparate cost characteristics.[55] ISPs have no right to demand such broad averaging of business user costs as currently exists, particularly where the result is a material distortion in the economic signals provided to the marketplace.

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[52] Even if some additional revenues are available from other sources at present, it would be contrary to Section 254 of the Communications Act to seek to perpetrate such an implicit subsidy and these subsidies will, in any event, be impossible to maintain in a competitive marketplace.

[53] Thus, ISPs' claims for transitional or other relief from an immediate cut-over to a new pricing methodology if that is to occur should likewise be addressed in the current environment.

[54] *See* Coalition Comments at 20-22

[55] *Implementation of the Local Competition Provisions of the Telecommunications Act of 1996*, First Report and Order, 11 FCC Rcd 15499, 15928, 16140 (1996) ("*First Interconnection Order*"). Voice and ISP-related calls have substantially different cost characteristics. *See supra* 8-13.

There are also no legitimate grounds to deny LECs' recovery of their actual costs simply because alternative network technologies, such as packet switching, may provide a more efficient alternative in the future to meet the data transport needs of ISPs. The fact remains that ISPs and their customers are currently using circuit switched network facilities for a substantial portion of their traffic and should, therefore, pay the costs of what they use. This is especially true because it is the FCC's current policies regarding ISP access arrangements – particularly ISPs' and their customers' ability to utilize flat-rated services that provide additional transmission capacity on an effectively "free" basis – which discourage smaller ISPs from moving to packet offerings. It is this requirement which underlies the most extensive regulatory barrier to ISPs' use of efficient data transport offerings.[56]

Finally, the mixed jurisdictional nature of ISP's traffic does not preclude the establishment of a rational cost recovery regime for ISP network usage.[57] Regulators and carriers deal with mixed use facilities and services every day in the context of the jurisdictional assignment of special access lines and percentage use allocation factors for network plant and traffic billing. Given that the preponderance of Internet access usage is interstate, it is incumbent upon the FCC to take the lead in promulgating a sensible rate structure for recovery of Internet access costs that sends the correct economic signals and that can be implemented, as appropriate, in both the federal and state jurisdictions consistent with the respective

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[56] *Cf., NOI*, ¶ 313.

[57] *See* Coalition Comments at 20-22. *See also NOI*, ¶ 315 ("[W]e seek comment on jurisdictional . . . questions, given the difficulty of applying jurisdictional divisions or time-sensitive rates to packet-switched networks such as the Internet.").

authority of each. Certainly, the current regime, which precludes the states from responding to real economic signals and arbitrarily assigns cost recovery for these mixed services to the intrastate jurisdiction, cannot be squared with sound economic policy or regulatory comity.

Perhaps most fundamentally, the Commission must recognize that the types of implicit subsidies that characterize LECs' existing rate structures and that ISPs urge the agency to maintain are simply not sustainable in the competitive marketplace envisioned by the Telecommunications Act.[58] As GTE repeatedly has emphasized in its interconnection, universal service, and access charge reform filings, a comprehensive solution is required.[59] A piecemeal approach to reform, such as the Commission has been attempting with the continued deferral of actual cost recovery issues to yet another future proceeding while implicit subsidy burdens such as the ISP "exemption" are perpetuated, does not reflect rational decisionmaking and cannot satisfy either the goals of the Act or other legal and constitutional constraints.[60]

Indeed, the continuation of the ISP "exemption" is already creating a distortive ripple effect in other markets. Many competitive LECs are extensively marketing their offerings to Internet access providers and other ISPs for the sole purpose of capturing those entities'

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[58] *See NOI*, ¶ 313 ("We seek comment on how our rules can most effectively create incentives for the deployment of services and facilities to allow more efficient transport of data traffic to and from end users").

[59] GTE previously stated that it "has consistently taken the position that all users of the network, including ISPs, should be responsible for paying their own way in a system based on efficient pricing and cost recovery principals. Access reform should provide ILECs with the ability to assess access charges equitably on all access service users, including ISPs." Comments of GTE, CC Docket Nos. 96-282, 94-1, 91-213, 18, n.31 (filed Jan. 29, 1997).

[60] *See id.* at v-vi.

overwhelmingly terminating traffic in order to attempt to obtain transport and termination charges from LECs under reciprocal local compensation arrangements. If CLECs were to be successful in this attempt, LECs would retain responsibility for the vast majority of the network cost increases caused by Internet access usage, incur a new cost burden in terminating payments to the CLECs, and lose all revenues from ISPs themselves. CLECs should not be permitted to game the system in this manner or otherwise allowed to take advantage of such arbitrage possibilities that lack any reasonable technological or economic basis. Rather, costs should be recovered from those who cause them to be incurred (and thus should follow the revenue stream when a customer changes providers), and explicit subsidy payments should be made available to those providers who continue to serve end users that public policy mandates have expressly deemed entitled to below cost services.

VI. CONCLUSION

Accordingly, GTE urges the Commission to move quickly in this and the related interconnection, universal service, and access charge reform proceedings to promulgate a consistent and comprehensive pricing policy to govern all jurisdictionally interstate services. This policy should permit LECs to recover their actual costs from the cost causers, provide LECs with explicit and adequate funding from competitively neutral sources where public policy dictates that end users not be required to pay their full costs of network usage, and ensure that all users, service applications, and technologies are subject to correct, cost-based economic signals so that rational investment choices can be made that will best promote the development of an efficient, economical, and technologically advanced network.

Respectfully submitted,

GTE SERVICE CORPORATION,
on behalf of its affiliated
domestic Strategic Business Units

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March 24, 1997

ATTACHMENT A

Affidavit of Alton Blackmon

Affidavit of Alton Blackmon

1. My name is Alton L. Blackmon. I am Group Manager-Infrastructure Dimensioning for GTE Telephone Operations. My business address is 545 E. John Carpenter Frwy, Irving, Texas. My principal duties and responsibilities include the direction and supervision of network traffic standards associated with voice and data communications.

2. In conjunction with these responsibilities, I have directed the preparation of the attached Internet Impact Report (3/97).

3. Internet Impact Report Attachment A .

The purpose of this report is to identify the portion of network hardware costs that GTE incurred to accommodate 1996 internet traffic[1] demand. Since historically there was no practical way to precisely identify the internet traffic from voice traffic on our network (internet traffic and voice traffic use the same common facilities) we had to make certain assumptions based on historical data (described below) that will result in reasonable estimates of the traffic attributable to Internet usage. Once the percent of internet traffic during the office busy hour is known, the hardware costs associated with this traffic can be determined.

A) Known study data:

- For year end 1996, GTE had 17,356,000 Access lines (counted using methodology for ARMIS 43.05 report).

- GTE has determined, based on quarterly internet audits, that the average holding time for an Internet call is 10 CCS.

- Recent market surveys[2] indicate that 11% percent of GTE telephone customers have access to the Internet. Thus, it is reasonable to assume that approximately 1,909,160 GTE customers have access to the Internet (0.11 x 17,356,000)

- Traffic studies of existing interoffice message trunks have determined that, on average these trunks have a capacity of 28 CCS.

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[1] When I refer to Internet traffic, I am referring to the traffic on the LEC's network that is originated by the LEC's subscriber and typically is routed from the originating end office over LEC interoffice facilities to the terminating wire center that serves the Internet Service Provider ("ISP").

[2] Q.E.D. Alert No. 123 (2/97) market survey.

- Analysis of switch line modules[3] with 6:1 concentration (the average concentration ratio for GTE's network) on average cost approximately $166,200.

- On average the cost of interoffice T-1 (24 channels) facility is $14,000.

- Based on a review of our network, the average switch Line Unit capacity is 4602 CCS.

B) Assumptions necessary to complete the analysis.

- It is reasonable to assume that between 5% to 8% of GTE customers that subscribe to internet access will access the internet during their office busy hour. A rather wide range of estimates was chosen simply to establish the magnitude of the impact knowing that precise data is not available. But, given the public's interest in accessing the Internet for timely news, weather and stock updates, the actual percentage is likely to be in this range. Thus, across our network, 95,458 to 152,732 of our customers (i.e., 5 - 8% of our customers that have Internet access) are using the Internet during the peak usage periods of our network.

- Due to our network design and the fact that Internet Service Providers desire to have the largest local calling areas available, we believe that 80% to 90% of our customers access internet by terminating calls to wire centers other than their own end office[4]. Thus, in order to complete these calls, our interoffice facilities are used. This results in anywhere from 76,366 to 137,458 of our customers using interoffice facilities during their office busy hour. (80% of 95,458 is 76,366 customers. 90% of 152,732 is 137,458 customers.)

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[3] Switch line units are configured to handle various traffic demand loads through the use of concentration ratios. Line modules can have concentration ratios varying from 4:1 to 8:1. A 4:1 concentrated line module will handle fewer lines than a 6:1 or 8:1 unit. Correspondingly, the average daily busy hour per line capacity for lines on a 4:1 unit will be higher than for a switch line unit using a 6:1 or 8:1 concentration ratio. In general the lower the concentration of the unit, the higher its cost. GTE's network has line modules of each concentration. The 6:1 concentration ratio was selected as a representative unit for this study analysis.

[4] Internal analysis of office configurations (interoffice calling capabilities) and the local offices that ISPs are using as their serving wire center indicate that on the average ISPs can receive traffic from 9 to 10 surrounding offices via the

Conclusions:

1) GTE customers that access the internet on average place 954,580 to 1,527,320 CCS of daily office busy hour traffic on our network. This is simply the product of the number of customers accessing the Internet during the busy hour and the average Internet holding time of 10 CCS. (10 CCS x 95,458 customer = 954,580 CCS. 10 CCS x 152,732 customers = 1,527,320 CCS.)

2) The approximately one to one and one half million CCS of traffic during the office busy hour requires GTE to install addition switch line units. The total number of line units required to accommodate this traffic is derived by dividing the Internet office busy hour CCS demand by the GTE network average line module CCS capability. 954,580 CCS divided by 4602 average CCS per line module = 207 line modules required. 1,527,320 CCS divided by 4602 CCS per average line module = 331 line modules required. Thus, 207 to 331 line modules are being used to accommodate the office busy hour internet traffic.

3) GTE customers that access the internet on average generate 763,660 CCS to 1,374,580 CCS of busy hour interoffice traffic. This is simply the number of customers that are utilizing the interoffice facilities during the office busy hour times on average internet holding time of 10 CCS. (10 CCS x 76,366 customers = 763,660 CCS and 10 CCS x 137,458 customers = 1,374,580 CCS.)

4) The number of interoffice facilities required to accommodate internet busy hour requirements is derived by dividing the interoffice usage by 28 CCS, the usage on the average trunk in GTE's network.(763,660 CCS divided by 28 CCS per trunk = 27,273 trunks required and 1,374,580 CCS divided by 28 CCS per trunk = 49,092 trunks required), At 24 trunks per T1 span the quantity of T1 spans required is 27,273 to 49, 092 (27,273 divided by 24 = 1,136 T1 spans 49,092 divided by 24 = 2,045 T1 spans).

5) Total cost per element is determined by multiplying quantity of hardware element required times average unit cost.

For Line Modules: 207 units X $166,200 per unit = $34.4 Million
331 units X $166,200 per unit = $55.0 Million

For Spans: 1,136 spans X $14,000 per span = $15.9 Million
2,045 spans X $14,000 per span = $28.6 Million

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local calling plan. Thus, the 80 to 90% assumption is a reasonable estimate of Internet access calls requiring our interoffice facilities.

6) Therefore, it is reasonable to assume that GTE was required to place additional hardware to accommodate internet access traffic during the office busy hour ranging from $50.3 Million to $83.6 Million.

The affiant says nothing further.

Alton L. Blackmon

Subscribed and sworn to
before me on this 21st day
of March, 1997.

Dallas County
Term Expires 6-8-98

ATTACHMENT A

GTE Telops - Internet Impact Report 3/97

Purpose: Identify network hardware costs that GTE Telops has incurred to accommodate internet traffic demand, as of Dec 1996.

1) GTE Customer data:
   o GTE had 17,356,000 access lines (1996 - ARMIS 43-05 report)

2) Market Study data:
   o 11% of GTE customers access internet = 1,909,160 (QST survey 2/1997)

3) Internet Study data:
   o Average internet user busy hour CCS = 10 CCS (GTE Telops internal survey)

4) Assumptions:
   o 5 to 8% of GTE customers that subscribe to internet services access the internet during their office daily busy hour = 95,458 to 152,732
   o 80 to 90% of these customers require interofffice facilities = 76,366 to 137,458 require interoffice facilities daily.
   o Average message trunk capacity of 28 CCS
   o Average Swt Line Unit Capacity = 4602 CCS
   o Average 6:1 Line unit Cost = $166,200
   o Average 24 channel span unit cost = $14,000
   o Voice and Internet demands are independent network demand events. While this may not be true in the future it is considered true for the past.

Conclusions:

1) In total, for 1996 activity,
   o GTE customers that access the internet on average generate 954,580 to 1,527,320 total CCS during the office daily busy hour.
   o GTE customers that access the internet on average generates 763,660 to 1,374,580 total CCS of daily busy hour interoffice facility requirements.

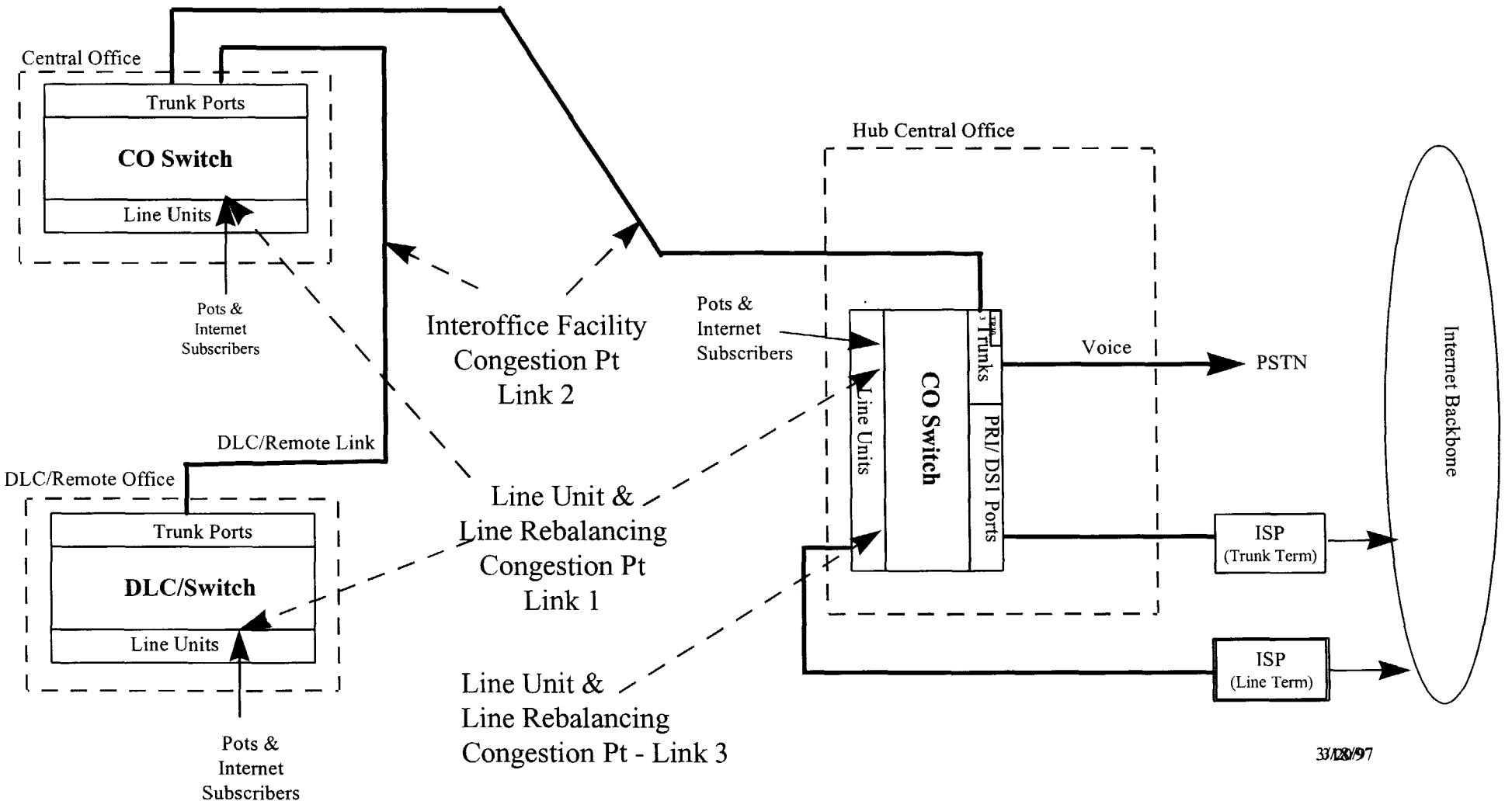
2) Total equipment/facility internet daily busy hour requirements:
   o Switch Line Units/Modules
     207 to 331 switch line units/modules
   o Interoffice Spans
     27,273 to 49,092 links or 1,136 to 2,045 (24 channel) spans

3) Total Cost to accommodate internet daily busy hour demand:
   A) Swt Line Units @ 166,200 per unit = $34.4M to $55.0M
   B) Spans cost @ $14,000 per span = $15.9M to $28.6M

ATTACHMENT B

Congestion Points in the Network

Congestion Points in the Network



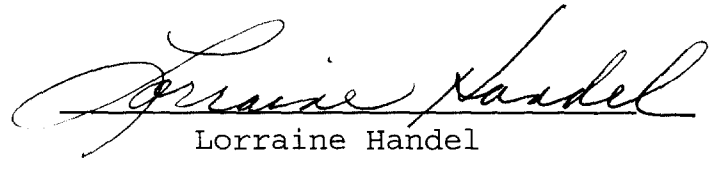
3/28/97

CERTIFICATE OF SERVICE

I, Lorraine Handel, hereby certify that on this 24th day of March, 1997, I caused true copies of the foregoing to be hand delivered to the following persons:

* Competitive Pricing Division
Common Carrier Bureau
Federal Communications Commission
1919 M Street, N.W., Room 518
Washington, D.C. 20554

International Transcription Service
2100 M Street, N.W.
Room 140
Washington, D.C. 20554



Lorraine Handel

* Two copies delivered.